the chip's distribution chamber **605** spatially aligned to the cartridges's **600** bottom reservoir **604**.

[0106] Upon transfer of a fluid sample from a suitable collection device retrieved fluid passes from the extraction chamber **601**, through the draining duct **602**, into the device's draining chamber. The segregation of bubbles occurs inside the draining chamber's top reservoir **603** by allowing the bubbles to rise upwards and accumulate as foam at the top of the reservoir **603** while the fluid accumulates at the reservoir base.

[0107] The removal of solid impurities occurs in three stages during the process of sample transfer through the cartridge **600**. In the first instance the largest impurities are removed as the sample passes from the extraction chamber **601** through the draining duct **602** into the draining chamber top reservoir **603**, with the size and shape of the draining duct **602** determining the size of impurities being withheld. The second removal of impurities takes place at the intersection of distribution chamber **605** and channels **607** of the fluidic chip **606**, with the dimensions and shape of the channel cross section determining the size of impurities being withheld. By selecting the width of the opening to be equal to that of the fluidic channel **607** and a combined depth of channel and bottom reservoir of between 0.5 mm and 1.5 mm, effective extraction and retention of solid impurities within the top reservoir **603** can be routinely achieved. The third and most detailed removal of fine impurities is achieved through the reagent pads **608**, with the pads porosity determining the size of impurities being withheld.

[0108] The narrow profile of the bottom reservoir **604** facilitates conditioning of the fluid sample, and thus quick and even filling of the distribution chamber **605** of the fluidic chip **606**. The cross-sectional diagram B shows the distribution chamber **605** is shallow in the 3^{rd} direction but elongated in the second direction along the top of the channels **42** for effective spreading into the channels **42**.

[0109] In the embodiment of FIG. **6***b*, the sequence of sample fluid flow in the first, second, and third directions still applies. However, upon moving in the third direction, it continues in the third direction along the channels, whereas in the FIG. **6***a* embodiment, it changes back to the first direction to flow along the channels.

[0110] Quick spreading (in about 1 to 2 sec) of the fluid across all of the channel inlet ports **41** can subsequently results in timely, uniform filling of all of the fluidic channels **607** of the chip **600**. The dimensions of the bottom reservoir **604** are a determinant of the overall effectiveness of the conditioning process and of the uniformity with which the filling of the fluidic channels subsequently occurs. By selecting the width of the bottom reservoir **604** to be substantially equal to that of the fluidic chip **606**, the height to be substantially equal to the length of the sample inlet ports **41** of the fluidic chip **600** and the depth to be between about 0.25 mm and about 2 mm, uniform capillary filling of the fluidic chip's **606** channels by conditioned, retrieved fluid samples with viscosities ranging between 1 and 20 cp can be routinely achieved.

[0111] Referring to FIGS. **7***a* and **7***b*, in various embodiments, fluidic chips **26** may be fabricated (FIG. **7***a*) by laminating multiple planar layers comprising a support layer **74**, a layer **73** with through-cut channel and well features, and an optically clear top layer **71**. Reagent, sensor and absorbent pads **72** may be introduced into the channels **42** at appropriate locations, and in a discontinuous, non-contiguous manner, prior to lamination of the top layer **71**, and may be fixed in place during the lamination process. To provide fluid flow into the channels **42**, entry ports may be formed in each laminated structure either at the edges or through the support layer **74** or top layer **71**. While there are only five channels illustrated, the fluidic chip may incorporate a different number of channels. In various embodiments, fluidic chips **26** may be fabricated (FIG. **7***b*) by injection moulding a support plate **75** with embedded channel structures. Reagent, sensor and absorbent pads **72** may be introduced into the channels **42** at appropriate location's, and in a discontinuous, non-contiguous manner, prior to lamination of the top layer **71**, and may be fixed in place during the lamination process.

[0112] Referring to FIG. **8***a*, in various embodiments, reagent, sensor and absorbent pads **802** are integrated into the channels **801** of a fluidic chip **800** as discretely spaced entities at appropriate locations in a discontinuous, non-contiguous manner, through suitable assembly techniques.

[0113] Referring to FIG. **8***b*, a fluidic chip **810** has integrated pads, whereby the reagent, sensor and absorbent pads **812** are held in place in discrete and separate positions at appropriate locations in a discontinuous, non-contiguous manner, via the surrounding walls of the fluidic channel **811**.

[0114] Referring to FIG. **8***c*, in a fluidic chip **820** the reagent, sensor and absorbent pads **822** are held in place in discrete and separate positions at appropriate locations in a discontinuous, non-contiguous manner, via recesses, which form part of the channel structure **821** and which accommodate part of the pad structure **822**. Said recesses may be part of the horizontal or vertical or horizontal and vertical channel walls **821**. The recesses have typical dimensions in the range of about 0.1 mm to about 1 mm in width, about 0.05 mm to about 1.00 mm in height and about 1 mm to about 50 mm in length.

[0115] Referring to FIG. **8***d*, a fluidic chip **830** has reagent, sensor and absorbent pads **832** held in place in discrete and separate positions at appropriate locations in a discontinuous, non-contiguous manner, via a continuous adhesive coating **833**, which forms part of the base of the channel structure **831**.

[0116] Referring to FIG. **8***e*, in a fluidic chip **840** the reagent, sensor and absorbent pads **842** are held in place in discrete and separate positions at appropriate locations in a discontinuous, non-contiguous manner, inside recesses **843**, which have an adhesive coating at their base, and which form part of the channel structure **841**. The recesses may be formed by means of a nonporous mask **844** directly applied onto the adhesive coating, with spaces provided in this masks with typical dimensions in the range of about 0.1 mm to about 1 mm in width, about 0.05 mm to about 1.00 mm in height and about 1 mm to about 50 mm in length.

[0117] Referring to FIG. **8***f*, in a fluidic chip **850** reagent, sensor and absorbent pads **852** are held in place in discrete and separate positions at appropriate locations in a discontinuous, non-contiguous manner, via single or multiple discontinuous areas of adhesive coatings **853**, which form part of the channel structure **851**. In various embodiments, said coatings have typical dimensions in the range of about 0.25 mm to about 5 mm in width and about 0.5 mm to about 25 mm in length.

[0118] Referring to FIG. **8***g*, in a fluidic chip **860** reagent, sensor and absorbent pads **862** are held in place in discrete and separate positions at appropriate locations in a discon-